

Notes on some Butterflies from Myingyan, Central Burma.—By CAPT. E. Y. WATSON, INDIAN STAFF CORPS, F. Z. S.

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Myingyan, as well as the rest of Central Burma, upsets one's preconceived ideas of Burma, which is generally looked upon as a land of heavy jungle and marsh and as reeking of fever. This last attribute may be considered as more or less mythical as regards the whole of Burma, in which there is no more fever than in Central or North-Eastern India, while where it exists it is almost entirely confined to the "terai" country at the foot of the hill ranges.

In Myingyan, however, not only is the fever a negligible quantity but the forest is non-existent, and the marsh or paddy-land is restricted to very limited areas flooded by the river; in fact the general appearance of the country is more like that of the Deccan than of the traditional Burma, and there are many points of resemblance between Myingyan and a place such as Ahmednagar. What jungle there is consists of low thorny scrub; while the chief crops cultivated are jowari, cotton, and oil-seed (gingelly), the soil being what is known as "black cotton" or a very fair imitation of it. Myingyan may be taken as fairly typical of what may be conveniently termed "Central Burma," which may be said to extend from Mambu northwards for some 150 miles; still further north the rainfall and general characteristics of the country again change and are very similar to those of Lower Burma and Tenasserim.

In Central Burma butterflies are comparatively scarce, and probably not more than 100 species would be found within ten miles of Myingyan as contrasted with some 300 odd which occur round Rangoon. The following notes are founded on a collection made by me from October to March, *i. e.*, practically the dry-season, though as the total rainfall is something under 30 inches it is doubtful whether the district would have proved much more prolific during the rains. Several species of interest were met with, one of which has recently been described as new[†] from Myingyan specimens.

No *Euplaeus* were observed, though probably *E. godartii*, Lucas, and *E. linnæi*, Moore, occur at the beginning of the rains; *Danaüs chrysippus*, Linnæus, and *D. plexippus*, Linnæus, [= *D. genutia*, Cramer], occurred commonly, and *D. limniace*, Cramer, more rarely.

A single *Mycalasis* was observed, probably a *Calysisme*, but the species is doubtful, as the insect was not caught; *Melanitis ismene*, Cramer, was not seen but doubtless occurs, *Lethe europa*, Fabricius,

was represented by a single specimen and is probably rare. The most interesting satyrid was the *Ypthima* which I have recently named *Y. cerealis*; this was the only species of the genus met with, and it occurred in great numbers but only within very restricted areas, owing no doubt to the unequal distribution of its food-plant; one of its favourite haunts was among the low bushes which grow on the bunds of the paddy-fields at the bend of the river, but it also occurred some miles away from these fields on high bare ground where the bushes were few and scattered.

Among the *Nymphalinxæ* there is not much of interest to record, the only species met with being *Ergolis ariadne*, Linnæus, *A. phalantha*, Drury, *Junonia leonias*, Linnæus, *J. almana*, Linnæus, *J. hierta*, Fabricius, and *J. orithyia*, Linnæus; *Neptis leucothoë*, Cramer (form *eurymene*, Butler); *Hypolimnas bolina*, Linnæus, and *H. missippus*, Linnæus, of these the last species is rare in Burma, and to the best of my knowledge is only found in the more arid tracts, and I have no record of its occurrence south of Mambu on the Irrawaddy.

Some sixteen species of *Lycænidæ* were met with; the dry-season form of *Chilades laius*, Cramer, occurred commonly, also *C. trochilus*, Freyer; *Zizera lysimon*, Hübner, was fairly common, and did not appear to differ from Indian specimens; *Z. otis*, Fabricius, of which *Z. sangra*, Moore, is a synonym, occurred in great numbers, this species in all its forms is quite distinct from *Z. indica*, Murray, originally described from Allahabad, which occurs commonly in Southern India. The difference between the two species does not lie in the shade of blue or extent of the black margins on the upperside as some writers have tried to make out, since these characters vary seasonally, there is, however, a well-marked and constant difference in the discal row of spots on the underside of the forewing, in *Z. indica* these spots are invariably prominent and black, encircled with white, in *Z. otis* they are brown, hardly darker than the ground-colour of the wing, and are encircled with grey, so that they do not stand out at all conspicuously, this difference will be found to be absolutely constant in all the seasonal forms, and can be readily recognised if Burmese and Southern Indian specimens be compared, though I am unable to say if the two species meet and occur together in any localities; if good series are compared other slight differences will be noticed in the marginal markings and disposition of the spots on the underside of the hindwing. *Azanus jesus*, Guérin, (the oldest name for *A. gamra*, Lederer), occurred rarely among *Acacia* bushes; Burmese specimens do not differ perceptibly from Indian ones. This is a rare species in Burma, and is only found in the arid tracts. A single specimen only of *Lycænesthes lycænia*,

Felder, was met with, though it is probably not uncommon; *Talicauda nyseus*, Guérin, which as far as Burma is concerned only occurs in the drier districts, was excessively common; Colonel Swinhoe has recently described the Khasia Hill race of this species as distinct from the typical South Indian race under the name *T. khasiana*, the only point of difference being that in *T. khasiana* the rows of white spots on the underside of the forewing are more pronounced than in typical *T. nyseus*, so that in the Burmese race one would expect these spots to be still more developed. This however is far from being the case, as in the Burmese specimens the spots are as a rule even smaller than in typical Southern Indian ones, while in many cases the spots are almost absent, the outer half of the wing being entirely black, with a few faint greyish irrorations in place of spots, so that in this respect the Burmese race is nearer to the Southern Indian one than to the Khasi Hill one, which seems rather to suggest that the character taken by Colonel Swinhoe is not specific; Burmese specimens however differ from Southern Indian ones in having rather less red on the upperside of the hindwing, and in the chequering of the fringe being obsolescent instead of very pronounced, none of the differences however seem to warrant the Burmese race receiving a separate name. No *Nacaduba* or *Lampides* was observed. *Catochrysops strabo*, Fabricius, with its unnamed dwarf form, occurred commonly, also *C. pandava*, Horsfield, with its dwarf form *C. contracta*, Butler. I have recently been able to examine the type specimen of the last-named form, and find that it is not as suggested in "Butterflies of India, &c.," the dwarf form of *C. cnejus*, Fabricius, but of *C. pandava*, and has two seasonal races precisely similar to those of the larger race; *C. cnejus*, the dwarf form of which has been named *C. hapalina*, Butler, was not met with. Attention does not appear to have been previously drawn to the fact that all the three common species of *Catochrysops* which occur in India have corresponding dwarf forms, these dwarf forms are commoner in dry than in wet districts, and in arid tracts like Sind probably exceed the larger race in numbers. Of other named *Catochrysops*, *C. theseus*, Swinhoe, is a "sport" of *C. cnejus*, and the type of *C. nicola*, Swinhoe, is a female of *C. pandava*, somewhat intermediate between the two seasonal forms. *Tarucus plinius*, Fabricius, occurred commonly, also *T. callinara*, Butler, the two seasonal forms of the last species differ slightly in the tone of the dark markings on the underside, which in the rainy-season form are almost black and in the dry-season form are rusty-brown, the position, size and shape of the markings do not appear to differ in the two races, nor is there any perceptible difference in the shade of blue or breadth of the margins on the upperside.

T. callinara is a quite distinct species from one I have in my collection from the Deccan, the latter being the *T. extricatus* of Butler, which has the markings on the underside much more linear and run together than in *T. callinara*, in which they are rounded and well separated. The correct synonymy of the species of this genus is doubtful as neither *T. nara*, Kollar, nor *T. theophrastus*, Fabricius, can be identified with any certainty without an examination of the type specimens. *T. callinara* is I think without doubt identical with *T. theophrastus* as identified in "Butterflies of India," though not with the *T. theophrastus* of the British Museum, which includes several distinct species, and Mr. Butler informs me he does not now consider his *T. extricatus* to be distinct from *T. nara* as identified by him. *T. callinara* within Burmese limits is strictly confined to the dry tracts of Central Burma. *T. alteratus*, Moore, and *T. venosus*, Moore, both appear to be perfectly distinct species. I therefore recognise five species of this genus as occurring within Indian limits: *T. plinius*, which is found throughout the Indian region from Ceylon all over Peninsula India to Assam and Burma; *T. callinara*, which probably sinks to *T. theophrastus*, and is as widely distributed as *T. plinius* but affects drier localities; *T. extricatus*, which probably sinks to *T. nara*, and is confined to the dry regions of Western and North-Western India and the Western Himalayas; *T. alteratus*, confined to the North-West Himalayas; and *T. venosus*, confined to the North-West Himalayas and the plains of North-West India. *Castalius rosimon*, Fabricius, and *Polyommatus baeticus*, Linnæus, occurred commonly, and a single specimen of *Amblypodia anita*, Hewitson, was obtained. I have recently been able to examine the types of most of the described species of *Amblypodia*, and find that the common purple species which occurs in Burma is certainly the *A. anita* of Hewitson described from Siam, and that *A. darana*, Moore, and *A. naradoides*, Moore, are also synonymous with it, the males of the three named forms appear quite inseparable, while the females in Southern India and Ceylon are dimorphic, *i.e.*, either blue or purple on the upperside, one form being almost as common as the other; in Burma, however, the purple female is the prevailing form and the blue female is excessively rare. This species occurs in Siam, the Andamans and throughout the greater part of India. *A. narada*, Horsfield, the type of which is in the British Museum and which was originally described from Java, is a quite distinct species, the male is much more blue than *A. anita*, and the female, which is purple, has a large extent of purple on the upperside of the hindwing. *A. andersonii*, Moore, is, as stated in the "Butterflies of India," almost without doubt identical with *A. narada*. A third species of the genus is the *A. erichsonii* of

Felder, the male of which is very brilliant blue with a broad black border to the forewing narrowing to the outer angle, this species is in the British Museum from the Philippines and Borneo. *A. taoana*, Moore, of which the type is in the British Museum, appears to be identical with *A. erichsonii*. *A. arracana*, Grose Smith, is also probably referable to the same species. *Aphnæus syama*, Horsfield, occurred rather rarely, and a second species which I identify as *A. schistaceus*, Moore, was slightly more common. This latter species belongs to the *vulcanus* group of the genus, and is the only one of the group recorded from Burma.

Among the *Pierinæ*—*Catopsilia catilla*, Cramer, *C. crocale*, Cramer, and *C. gnoma*, Fabricius, were common, this last is probably the dry-season form of *C. pyranthe*, Linnæus, and has many other names, but I am unable to say which is the oldest. *Nychitona wiphia*, Fabricius, and *Nepheronia hippia*, Fabricius, (= *gæa*, Felder), occurred commonly, and *Delias descombesi*, Boisduval, and *D. hierte*, Hübner, rather rarely. A single male of *Appias vacans*, Butler (the dry-season form of *A. hippo*, Cramer) was obtained in December. *Appias zelmira*, Cramer, and *Huphina dapha*, Moore, were exceedingly common; the extreme rainy-season race was not met with, all the specimens obtained from November to March being either of the typical dry-season race or forms intermediate between the two races. *Terias hecabe*, Linnæus, occurred commonly in its typical form during November and December, but almost invariably in bad condition, the dry-season form, *T. excavata*, Moore, occurred commonly from November to January, and was replaced during February and March by the extreme dry-season form, *T. swinhoei*, Butler. Yellow forms of *Ixias* occurred in the utmost profusion, and showed the usual seasonal variation in the breadth of the dark margins on the upperside, and in the tone and markings of the underside; most of the specimens caught were typical *I. moulmeinensis*, Moore, though several were typical *I. pyrene*, Linnæus, and a few typical *I. pirenassa*, Wallace, while there were many intermediates between the three forms.

The only *Papilio* noticed was *P. demoleus*, Linnæus (= *P. erithonius*, Cramer), which was excessively common.

Among the *Hesperiidæ* no species could be said to occur commonly, but a few specimens were obtained of *Baoris (Chapra) mathias*, Fabricius, *Baoris (Parnara) bada*, Moore, *Telicota augias*, Linnæus, and *Hesperia galba*, Fabricius. A single sex was obtained of *Taractrocera ziclea*, Plötz, a species recently found to occur in Burma; also a few specimens of a *Padraona* which I identify as *P. mæsoides*, Butler, as well as of a second species which I believe is undescribed.

NOTE BY LIONEL DE NICÉVILLE.

As regards the distinctness of *Zizera indica*, Murray, from *Z. otis*, Fabricius, I wrote in "The Butterflies of India, Burma and Ceylon," vol. ii, p. 121 (1890) that "There is no doubt that the former is strictly synonymous with *Z. sangra*, Moore [which Capt. Watson admits], which again is a synonym of *Z. otis*, Fabricius." The only authors who have referred to *Z. indica* are Mr. Murray who described it from Allahabad at the instigation of Mr. Moore, Mr. Moore who records it from Ceylon and the N.-W. Himalayas, Mr. Butler from Mhow and Formosa, Col. Swinhoe from Poona and Ahmednugger in the Bombay Presidency, and Dr. O. Staudinger with a query from Palawan in the Philippine Islands. I have a very long series of specimens of *Z. otis* from almost throughout India, Burma, Sumatra, Java, Celebes, &c. I have tried my utmost to separate these specimens into two species by the character of the spots on the underside of the forewing by which test Capt. Watson says they can be differentiated, but have failed, as though in some specimens the spots are "brown," (or more correctly pale fuscous) with grey borders, while others are deep black with prominent white borders, I have many specimens which are strictly intermediate. I gather that Capt. Watson restricts *Z. indica* to Burma and South India, but it must be held to occur in the N.-W. Provinces, from whence it was originally described. But Capt. Watson does not say where he considers *Z. otis* to occur. I consider *Z. otis* to inhabit all India and across Southern Asia to Hongkong, Burma, the Malay Peninsula, the Philippine Islands, and probably most of the islands of the Malay Archipelago, from many of which it has been recorded, chiefly by the German and Dutch writers, as *Z. lysizone*, Snellen.

With regard to *Tarucus theophrastus*, Fabricius, which Capt. Watson splits up into four distinct species in India, I am prepared to admit tentatively that the *T. venosus*, Moore, may be a distinct species; but that *T. callinara*, Butler (? typical *T. theophrastus*), *T. extricatus*, Butler (? *T. nara*, Kollar), and *T. alteratus*, Moore, are also distinct I greatly doubt. In this connection the notes by Dr. N. Manders in Ent. Month. Mag., vol. xxviii, p. 130 (1892) on the seasonal forms of *T. alteratus* and *T. theophrastus* found at Rawal Pindi in the Punjab may be studied with advantage.

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